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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,510	12/01/2000	Sung-Kyu Choi	Q61373	1094

7590 05/20/2005  
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EXAMINER

CZEKAJ, DAVID J

ART UNIT PAPER NUMBER

2613

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/726,510	CHOI, SUNG-KYU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dave Czekaj	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

On page 6, the applicant argues that Iverson and Jeong teach encoding a macroblock, not frame data as recited in the claims. While the applicant's points are understood, the examiner respectfully disagrees. The examiner notes that blocks or macroblocks grouped together form a frame. Since blocks or macroblocks make up a frame, blocks or macroblocks are considered to be frame data. Therefore the rejection has been maintained.

On page 7, the applicant argues that the desire to achieve greater efficiency *may not necessarily* lead to having two separate memories for two sets of data, but rather a single memory *may* result. While the applicant's points are understood, the examiner respectfully disagrees. The examiner understands the applicant's point of view that achieving greater efficiency may not necessarily lead to having separate memories, however, *may not necessarily* implies in certain cases two separate memories can be used to achieve greater efficiency. Therefore the rejection has been maintained.

On page 7, the applicant requests the examiner to point out wherein the motion prediction part and SAD examiner are disclosed within the reference. Please note Iverson figure 3. The motion estimator serves as the motion prediction part and the block classifier and block classification statistics generator serve as the SAD examiner. Also note Jeong figure 2. The motion prediction serves as the motion prediction part and blocks 200, 106, and 103 serve as the SAD examiner.

### ***Claim Rejections - 35 USC § 103***

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iverson et al. (5832234), (hereinafter referred to as "Iverson").

Regarding claims 1-3, Iverson discloses an apparatus that relates to block classification schemes for encoding images using block transforms (Iverson: column 1, lines 10-12). This apparatus comprises "comparing frames to detect a sum of absolute pixel differences value" (Iverson: column 5, lines 42-61, wherein the sum of absolute pixel differences value is the SAD, comparing frames is the process of comparing blocks) and "an SAD examiner for generating coding selection information for coding the frame in the intra mode when the SAD value exceeds a predetermined threshold or in the inter mode when the SAD value does not exceed the predetermined threshold" (Iverson: figures 6A-6B, column 9, lines 5-11). Although Iverson fails to show the first and second memories as disclosed, Iverson does show the current and reference frame data being applied as separate inputs to the motion estimator (Iverson: figure 3, item 302). The examiner notes that having the current and reference frame data being applied as separate inputs suggests that the current and reference frame data are stored in different storage mediums. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement

the different storage means/memories in order to make the apparatus more efficient by allowing the system to perform more complex operations due to the increase in memory.

Regarding claim 4, Iverson discloses "receiving a plurality of SAD values of present input frame data and generating the coding selection information after the plurality of SAD values of the present input frame data are received" (Iverson: column 5, lines 42-65, wherein the plurality of SAD values is the summing of the plurality of pixels, the selection information is whether to encode the block using the inter or intra modes).

Regarding claim 5, Iverson discloses "each of the plurality of SAD values of the present input frame data are compared with the predetermined SAD threshold to code the frame data in one of the intra or inter coding modes" (Iverson: column 5, lines 42-65, wherein the plurality of SAD values are contained within the inter-SAD value, the predetermined SAD threshold is the specified threshold).

Regarding claims 6-7, note the examiners rejection for claims 4-5.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong (6393060).

Regarding claims 1-3, Jeong discloses an apparatus for coding and decoding low transfer rate video images (Jeong: column 1, lines 7-9). This apparatus comprises "comparing frames to detect an SAD" (Jeong: column 7, lines 37-38, wherein the SAD value is the difference between frames) and "an

SAD examiner for generating coding selection information for coding the frame in the intra mode when the SAD value exceeds a predetermined threshold or in the inter mode when the SAD value does not exceed the predetermined threshold" (Jeong: column 7, lines 19-39, wherein the threshold is the value A, the SAD value is the SAD). Although Jeong fails to show the first and second memories as disclosed, Jeong does show one memory for storing the frame data needed for the SAD calculations (Jeong: figure 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Jeong and split the one memory into two memories in order to make the apparatus more efficient by allowing the system to perform more complex operations due to the increase in memory.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US-6850564      02-2005      Pejhan et al.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not


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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (571) 272-7327. The examiner can normally be reached on Monday - Friday 9 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CHRIS KELLEY  
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